



SEQUENCE LISTING

<110> Hosted, Jr., Thomas J.
Horan, Ann C.

<120> Isolation of *Micromonospora carbonacea* var *africana*
pMLP1 integrase and use of integrating function for
site-specific integration into *Micromonospora*
halophitica and *Micromonospora carbonacea* chromosome

<130> IN01164K US

<140> 09/855,340

<141> 2001-05-15

<150> 60/204,670

<151> 2000-05-17

<160> 19

<170> PatentIn Ver. 2.1

<210> 1

<211> 1179

<212> DNA

<213> *Micromonospora carbonacea*

<400> 1

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|-------------|------|
| gtgtggatcg | agaagaacgg | gcccgtctac | cgcatcggg | acctcgttcg | cggtaaaaag | 60 |
| gtcaccattc | agaccgggta | tccgacgaag | accagcgcca | agaatcgcat | ggtgcagttc | 120 |
| cggtgcggagc | agtgtcaggg | caacgcgcgc | atgccgcgcg | gcggtcagat | taccctcgcc | 180 |
| gattcgtg | gggagtggg | gccgagctac | gaaaagacgc | tgaaccgcac | cgccgtgaac | 240 |
| tcggagggga | accggatccg | caaccacctc | ctgcccatc | tcggccatct | cacccttgac | 300 |
| gagctggagc | ggcagggtcac | ccagcagtgg | gtcaacgacc | tggaggcccg | cgctcgcccg | 360 |
| tggccggagt | ccacgcgggg | tcgtcggaa | ccgctggcag | cgaagacgat | caggctcaac | 420 |
| cacggctcgc | tgcacacgat | ctgcggcgcg | gagccgaaag | agatgaagtt | cctgagcgac | 480 |
| ccgtgctctt | cgacgatgct | gccccggcgc | ccgcccgcac | ggcgaccgct | cgctcatgctg | 540 |
| ccggagatcg | gtcggcttat | caecggcgtt | gcgatcggcg | tgccgcccgg | ccgggtcgac | 600 |
| ctgggtggca | ccggtctgag | gtgggggtgag | gcgatcggcc | tccaggagct | ggccagcagc | 660 |
| ctgtctgcgc | cgccggcccc | gctgaccgtc | gagcagcagc | ggcgacaggt | cagtttcacc | 720 |
| ggagagctcg | tcttcacgtc | gccgaagacc | gcgaagggcc | agaaaaagtga | cgaggtcgtg | 780 |
| acgaaagtgc | ctctactgtc | tacgccactc | atcgccggaa | tccggcgcat | ctgggtcaag | 840 |
| ttcacccgcg | cgaaaaggcg | gatggtaagg | acgcgcaatt | atctcggcca | cactcacgcg | 900 |
| gcgtgcgagg | aagccgggct | tccgggctta | cgcattcacg | cccgcgcctc | cggtcactcg | 960 |
| gcgatctctga | tttctgccgg | gcgtccgctg | tcggcgatct | agggaggtcg | cgaggggatc | 1020 |
| tcgatccggg | tcacggatct | gctgtacggg | caactcgctg | aggacctgga | ggcggaactc | 1080 |
| ctcgcggcga | tcgaggagcg | gatggccggc | gtccgggctg | | | 1140 |
| gacgaggagc | tgacggacgt | gttggccgac | gcagcatga | | | 1179 |

<210> 2

<211> 426

<212> DNA

<213> *Micromonospora carbonacea*

<400> 2

| | | | | | | |
|------------|------------|------------|------------|------------|------------|-----|
| atgcgcaaca | caccggggct | ggggcgcgcc | acatggggcg | catacgtcct | caccgcccgc | 60 |
| gagcgcgcgc | gactgaccaa | gagcgagttg | gccaggcgca | tccagaagga | ccggggcacc | 120 |
| gtcgcggcgt | gggaggagcg | caagaaccgg | cccgacgacg | ggcactctgt | tgcccgctc | 180 |
| gccaggtg | tcggcctcga | cctcgacgaa | gcctcgcgcg | ccgaggtctc | gcgccccgcg | 240 |
| gtaccccg | cagcgacccc | aaccatggac | ctggagcagg | aaatcgagct | ggtccgcacc | 300 |

gaccccaagc tggacgagga catgaagcgg cgcacatcgc cccaaatcct ggagcgccgt 360
gagcgcgaca aggcggcggc gatcgaggaa accaagcggc tcacgcacct gttccgcccgt 420
agctga 426

<210> 3
<211> 34
<212> DNA
<213> Micromonospora carbonacea

<400> 3
ccccggtacg ggttcaattc ccatcagtc cccg 34

<210> 4
<211> 241
<212> DNA
<213> Micromonospora carbonacea

<400> 4
tattagtccg cagcgccgcc ggcccgcgcg gagcggagcg catgggtggct gtagctcagt 60
tggcagagca ccgggttgtg gtcccgggtg tcgtgggttc aattcccatc agtcacccgt 120
acacgaagcg cccctccact cggagggggc cttcggcggt cctgaggggt cgcgggtcagg 180
cggtcgggtc ggcgctgggg gaetcgggcc cgtcggcggg agtggcctcg gcgtccgggg 240
a 241

<210> 5
<211> 243
<212> DNA
<213> Micromonospora carbonacea

<400> 5
tggcgggggt gtggctatta ttagtcgcga cgcgcgcccg ccccgccgga gcggagcgca 60
tggtgggtgt agctcagttg gcagagcacc ggggtgtgtt cccgggttgc gtgggttcaa 120
ttcccatcag tcacccggca agtggatcta ctccacagca gatcaggccc cctccgaaga 180
gggggcctga tgcgtcatag gggacaggta ggggaactca acccccggtc cttgctcgc 240
gtc 243

<210> 6
<211> 247
<212> DNA
<213> Micromonospora carbonacea

<400> 6
taggggaatc cactccggag acgcccggag caatccggag catgacggag caaccagcag 60
gtcaggttggc ctgttgaccc cctgaccagg gcccgggtac ggggtcaatt cccatcagtc 120
accggtacac gaaggccccc tccactcgga gggggccttc ggcgttctct aggggttcgcg 180
gtcagggcggg cggctcggcg ctggggggact cggcccgcgc ggcggggagt gccctcggcg 240
ccgggga 247

<210> 7
<211> 255
<212> DNA
<213> Micromonospora halophytica

<400> 7
ttctctcgca cccgcccggg gcgttcgacc ggggtcggcg gcattgggtg ttagctcag 60
ttggcagagc accgggttgt ggtcccgggt tcgtgggtt caattcccat cagtcacccc 120

aggttaagacc caggtcaggg ccggtttctca ccggccctga cgcattttca ggggcatggt 180
 gggggcgcta ccgggggtgg ggtgtctcac cgcgagccag catctcgatc aggcgatcga 240
 gcggcgctg ccggg 255

<210> 8

<211> 315

<212> DNA

<213> Micromonospora halophytica

<400> 8

tttctccgca cccgccggg gcgttcgacc gggcgccggc gcatgggtggc tgtagctcag 60
 ttggcagagc accgggtgtg ggtcccggtt gtctgtgggt caattcccat cagtcacccg 120
 gcaagtggat ctactccaca gcagatcagg cccctccga agagggggcc tgatcggtca 180
 taggggacag gtaggggaac tcaacccccg gctccttget cgcgtcgggt catgccgtcc 240
 gcgtacccct ccgctacct ggccctctcc cgttctctga tctcggcgcc gagctgatcg 300
 cgcaggtgcg cctcc 315

<210> 9

<211> 260

<212> DNA

<213> Micromonospora halophytica

<400> 9

taggggaatc cactccggag acgcccggag caatccggag catgacggag caaccagcag 60
 gtcagggtgc ctgttgacc cctgaccagg gcccgggtac ggggttcaatt cccatcagtc 120
 accccaggta agaccagggt caggggccgtt tctcaccggc cctgacgcgt tttcaggggc 180
 atggtggggg cgctaccggg ggtgggggtgt ctcaccgcga gccagcatct cgatcaggcg 240
 atcgagccgg cgtgcgggg 260

<210> 10

<211> 209

<212> DNA

<213> artificial sequence

<220>

<223> pMLP1 attP region

<400> 10

taggggaatc cactccggag acgcccggag caatccggag catgacggag caaccagcag 60
 gtcagggtgc ctgttgacc cctgaccagg gcccgggtac ggggttcaatt cccatcagtc 120
 acccggcaag tggatctact ccacagcaga tcaggccccc tccgaagagg gggcctgatg 180
 cgtcataggg gacaggtagg ggaactcaa 209

<210> 11

<211> 19

<212> DNA

<213> artificial sequence

<220>

<223> primer PR144

<400> 11
tgcttcgacg ccatcargg

19

<210> 12

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> primer PR145

<220>

<221> misc_feature

<222> (7)..(7)

<223> n is inosine (I)

<400> 12
gtggaanccg ccgaakccgc

20

<210> 13

<211> 20

<212> DNA

<213> artificial sequence

<220>

<223> primer PDH504

<400> 13
agggcaacaa ggggaagcgtc

20

<210> 14

<211> 21

<212> DNA

<213> artificial sequence

<220>

<223> primer PDH505

<400> 14

ggcgggggtg tggctattat t

21

<210> 15

<211> 21

<212> PRT

<213> artificial sequence

<220>

<223> amino acid sequence of open reading frame indicated in figures 4b
and 4d

<400> 15

Ser Pro Asp Ala Glu Ala Thr Pro Ala Asp Gly Ala Glu Ser Pro Ser
1 5 10 15

Ala Glu Pro Thr Ala
20

<210> 16

<211> 21

<212> PRT

<213> artificial sequence

<220>

<223> amino acid sequence of open reading frame indicated in figures 5b
and 5d

<400> 16

Arg Gln Arg Arg Leu Asp Arg Leu Ile Glu Met Leu Ala Arg Gly Glu
1 5 10 15

Thr Pro His Pro Arg
20

<210> 17
<211> 21
<212> PRT
<213> Micromonospora carbonacea

<400> 17

Ser Pro Asp Ala Glu Ala Thr Pro Ala Asp Gly Ala Glu Ser Pro Ser
1 5 10 15

Ala Glu Pro Thr Ala
20

<210> 18
<211> 21
<212> PRT
<213> Micromonospora halophytica

<400> 18

Arg Gln Arg Arg Leu Asp Arg Leu Ile Glu Met Leu Ala Arg Gly Glu
1 5 10 15

Thr Pro His Pro Arg
20

<160> 19

<170> PatentIn version 3.3

<210> 1
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> primer PDH502

<400> 19
ttgttggtcc ggcccgaac g